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THE FARM INDEX

ECONOMIC RESEARCH SERVICE ■ U.S. DEPARTMENT OF AGRICULTURE ■ AUGUST 1965

4/8

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economic trends

ITEM	UNIT OR BASE PERIOD	'57-'59 AVERAGE	1964		1965		
			YEAR	JUNE	APRIL	MAY	JUNE
Prices:							
Prices received by farmers	1910-14 = 100	242	236	233	243	251	256
Crops	1910-14 = 100	223	238	242	243	248	243
Livestock and products	1910-14 = 100	258	235	225	244	254	266
Prices paid, interest, taxes and wage rates	1910-14 = 100	293	313	313	320	323	323
Family living items	1910-14 = 100	286	300	300	303	308	307
Production items	1910-14 = 100	262	270	269	276	278	278
Parity ratio		83	76	74	76	78	79
Wholesale prices, all commodities	1957-59 = 100	—	100.5	100.0	101.7	102.1	102.8
Commodities other than farm and food	1957-59 = 100	—	101.2	100.9	102.1	102.3	102.4
Farm products	1957-59 = 100	—	94.3	93.2	97.6	98.4	100.3
Food, processed	1957-59 = 100	—	101.0	100.2	102.3	103.3	105.9
Consumer price index, all items	1957-59 = 100	—	108.1	108.0	109.3	109.6	—
Food	1957-59 = 100	—	106.4	106.2	107.3	107.9	—
Farm Food Market Basket: ¹							
Retail cost	Dollars	983	1,015	1,008	1,022	1,030	—
Farm value	Dollars	388	373	360	394	412	—
Farm-retail spread	Dollars	595	642	648	628	618	—
Farmers' share of retail cost	Per cent	39	37	36	39	40	—
Farm Income:							
Volume of farm marketings	1957-59 = 100	—	118	104	84	87	107
Cash receipts from farm marketings	Million dollars	32,247	36,889	2,608	2,466	2,546	3,000
Crops	Million dollars	13,766	17,135	1,060	804	823	1,200
Livestock and products	Million dollars	18,481	19,764	1,548	1,662	1,723	1,800
Realized gross income ²	Billion dollars	—	42.2	—	—	—	45.0
Farm production expenses ²	Billion dollars	—	29.3	—	—	—	30.0
Realized net income ²	Billion dollars	—	12.9	—	—	—	15.0
Agricultural Trade:							
Agricultural exports	Million dollars	4,105	6,347	559	554	333	—
Agricultural imports	Million dollars	3,977	4,082	314	369	339	—
Land Values:							
Average value per acre	1957-59 = 100	—	—	131 ³	139 ³	—	—
Total value of farm real estate	Billion dollars	—	—	150.8 ³	159.4 ³	—	—
Gross National Product ²							
Consumption ²	Billion dollars	456.7	622.6	618.6	—	—	658.0
Investment ²	Billion dollars	297.3	399.3	396.1	—	—	423.0
Government expenditures ²	Billion dollars	65.1	87.7	87.2	—	—	94.3
Net exports ²	Billion dollars	92.4	128.6	129.6	—	—	133.6
	Billion dollars	1.8	7.0	5.7	—	—	7.1
Income and Spending: ⁴							
Personal income, annual rate	Billion dollars	365.2	491.4	489.3	515.8	520.0	523.9
Total retail sales, monthly rate	Million dollars	17,105	21,802	21,773	22,865	23,375	23,294
Retail sales of food group, monthly rate	Million dollars	4,159	5,183	5,202	5,400	5,391	—
Employment and Wages: ⁴							
Total civilian employment	Millions	64.9	70.4	70.4	71.7	71.9	72.1
Agricultural	Millions	6.0	4.8	4.8	4.8	5.0	4.7
Rate of unemployment	Per cent	5.5	5.2	5.3	4.9	4.6	4.7
Workweek in manufacturing	Hours	39.8	40.7	40.6	40.9	41.1	41.0
Hourly earnings in manufacturing, unadjusted	Dollars	2.12	2.53	2.53	2.60	2.61	2.62
Industrial Production ⁴	1957-59 = 100	—	132	132	141	141	142
Manufacturers' Shipments and Inventories: ⁴							
Total shipments, monthly rate	Million dollars	28,745	37,129	36,791	40,044	39,870	—
Total inventories, book value end of month	Million dollars	51,549	62,944	60,398	63,999	64,256	—
Total new orders, monthly rate	Million dollars	28,365	37,697	37,782	41,120	40,220	—

¹ Average annual quantities of farm food products purchased by urban wage-earner and clerical-worker households (including those of single workers living alone) in 1960-61—estimated monthly. ² Annual rates seasonally adjusted second quarter. ³ As of March 1. ⁴ Seasonally adjusted.

Sources: U.S. Dept. of Agriculture (Farm Income Situation, Marketing and Transportation Situation, Agricultural Prices, Foreign Agricultural Trade and Farm Real Estate Market Developments); U.S. Dept. of Commerce (Industry Survey, Business News Reports, Advance Retail Sales Report and Survey of Current Business); and U.S. Dept. of Labor (The Labor Force and Wholesale Price Index).

A financial wrap-up for the first half of 1965 puts a dollar sign on recent gains in farm income—gains tempered by the fact that farm people still have only about three-fifths the per capita disposable income of nonfarmers.

Thus, the current report makes for some satisfying reading for farmers because it's liberally laced with "ups."

UP—The seasonally adjusted annual rate of realized net farm income in the first half, rose by \$1 billion over last year to \$13.8 billion. Mainly responsible were unusually strong gains in income in May and June, particularly for meat animals.

This dollar gain may not be maintained in the last half. However, realized net farm income for all of 1965 may well turn out to be the highest in over a decade, continuing last year's rise after three years of relative stability.

UP—Realized gross farm income in the first half increased to \$43.6 billion, adjusted annual rate. The gain: 3 per cent over the year-earlier rate, because of increases in cash receipts from marketings and gains in government payments to farmers.

UP—Production expenses rose but not as fast as realized gross income. At adjusted annual rates, expenses in the first half were an estimated \$29.8 billion, roughly \$400 million over the year before, due partly to increased costs of feeder cattle and feed.

Marketings in the first six months of 1965 brought in an estimated \$15.9 billion. That adds up to a rise of \$700 million over the first half of 1964. About \$550 million of the gain came from livestock and product receipts; the rest came from crops.

The livestock and products marketing volume was about steady with 1964's first half but

prices jumped 6 per cent. Meanwhile, the crop marketing volume made a slight gain but prices dropped a bit.

Livestock and Products: Cattle and calf marketings may be up a bit from 1964 but hog slaughter will be off, perhaps by 10 per cent or more. Also, a slight gain is expected in milk output and the volume of milk sold. Egg marketings will likely be about the same as last year. In contrast, broiler volume may be up 5 per cent or more.

Crops: The volume of crop marketings during 1965 may slip a little from last year, despite the larger crop output indicated. Part of the reason for the drop: 1964's reduced production. Plantings for 1965 harvest total 308 million acres, according to the July crop report. That's 1.5 million acres above last year but only 2 per cent above 1962's record low.

Feed grain acreage is off from last year, although more acreage is planted to sorghums. Corn output is forecast at 3.9 billion bushels, up 10 per cent from the drought-cut volume in 1964.

Soybean planted acreage is an estimated 35.6 million acres, a record high and 12 per cent above last year. Acreage in cotton is down 4 per cent. Production of late-summer potatoes is up an estimated 12 per cent. Sugar beet acreage is down 9 per cent but yields may be up somewhat.

Wheat production is put at 1,354 million bushels, 5 per cent more than last year. Tobacco output may be off 10 per cent.

Here are late details for some individual commodities:

Fed Cattle: Prices next fall will depend largely on the number of cattle placed on feed this summer. If third quarter placements con-



the agricultural outlook

tinue at the high second quarter rate (24 per cent above a year earlier), October-December marketings will rise and prices will decline from July-September levels. However, if placements trail off this summer, fall prices likely will stay above the October-December 1964 average of \$24.57 per 100 pounds (Choice steers, Chicago).

The July 1 number of cattle on feed was up 9 per cent from a year earlier. However, all the gain was in numbers of animals weighing less than 900 pounds. The decline for those in heavier weight groups indicates that slaughter weights in the third quarter likely will continue relatively light. But numbers marketed may gain; producers' intentions as of July 1 were for 6 per cent more marketings out of feedlots than in the third quarter of 1964.

Broilers: A large buildup is underway in production and in hatching-egg supply flocks following 12 months of relatively favorable prices. Federally-inspected broiler slaughter was 4 per cent above 1964 levels in the second quarter and probably is running about 10 per cent above in the third quarter. Also, fourth quarter output likely will run substantially above a year earlier.

This large production gain is expected to push broiler prices a little below a year earlier. Although prices later in the year may go low enough to arrest the expansion in hatchery supply flocks, the potential to expand broiler production may keep growing into 1966.

This expanding production potential is indicated by recent large additions of pullet chicks to hatchery supply flocks. By December, the number of layers producing hatching eggs probably will have climbed about 12 per cent above year-earlier levels, based on recent pullet chick placements. This is in contrast to a June figure that was down 9 per cent from June 1964. This expansion will create strong pressure for a broiler production bulge in early 1966.

Dairy: Prices farmers received for milk sold wholesale averaged \$3.92 for 100 pounds in the second quarter of 1965, up 7 cents from a year

earlier. Mainly responsible were higher prices paid for milk used in butter and by-products, cheese and evaporated milk.

Farm prices will rise seasonally in the third quarter and may continue slightly above 1964 levels for the rest of the year because of higher support prices.

Wheat: The 1965/66 wheat supply is put at 2,185 million bushels, about the same as the year before but down about 500 million from the record 1960/61 total.

Domestic use for the 1965/66 marketing year is expected to be up somewhat from last year. Reason: increased use of wheat for feed.

If such a gain materializes and if exports about match those in 1964/65, total wheat disappearance will be around 1,395 million bushels. This would drop next July's carryover a bit from the July 1965 total of 819 million bushels.

Vegetables: Fresh supplies will be seasonally large during August and September. July 1 production prospects indicated ample to heavy supplies of most items. Production is expected to be 1 per cent larger than last year but slightly below the 1959-63 acreage.

Canned vegetable supplies during the 1965/66 marketing season may be down slightly from last season because of reduced carryover and prospects for a slightly smaller total pack.

Supplies of new-crop potatoes for summer marketing are up from a year ago, based on a gain in late-summer output. However, prices through summer will likely average above year-earlier levels because processor demand is strong. Use for chips keeps growing and use for freezing has risen sharply. In relation to current disappearance, stocks of frozen potatoes are the lowest in many years.

Fruit: The deciduous fruit crop for 1965 will be slightly smaller than the record 1964 crop but a tenth above the 1959-63 acreage, if July 1 prospects materialize. Although supplies of fresh deciduous fruits will be seasonally large during late summer and early fall, supplies of some items—particularly pears—will be well below a year earlier.



BLEND PRICES THE BEST BET FOR MILK?

Every pricing system has its drawbacks and that's true of alternatives to blend pricing for milk. They have advantages, too. Here's what might happen on typical Michigan dairy farms with different methods

There's a lot of talk about finding a substitute for blend prices in the dairy industry. Here's what could happen, given a few pricing alternatives.

The answers are based on conditions prevailing on six common types of Michigan farms. The study was conducted by the Economic Research Service, in cooperation with Michigan State University.

With voluntary direct payment plans and blend prices for milk. The system calls for blend prices and no limit on production. Payments would be available for voluntary limits on production.

Almost any level of payment would attract some producers at some blend prices. A relatively low payment would draw into the plan those farmers with the least ability to expand production beyond their historic base. But it would take much larger payments for the plan to attract the large-

volume dairymen.

The full allotment and payment program might do more to eliminate dairy herds than to reduce the amount of milk produced.

And the higher the blend price, the higher the payment would have to be.

In fact, the payment would have to be more than the blend price, if the price were high enough, for farms with a productive potential far beyond their historic base.

With allotments and direct payment plans. Milk is sold under allotments and at blend prices; payments are available for reducing production below allotments.

The combination of compulsory allotments and compensation payments would draw in more of the farmers, especially if payments were near the \$2.00 level. Other payment levels tested were \$1.00, \$2.50 and \$3.00.

This alternative would favor cash crop farming and beef feed-

ing. It would also increase the pressure on farmers to add land, with higher prices and rentals for land likely as a result.

With Class I base plans. This approach to pricing provides one price for quantity of milk going into fluid use, a lower one for any excess for manufacturing uses and no direct payments.

In such a program, the level of profitable milk production drops below the present system of blend pricing. But many farms would still produce milk—even at the lower price for excess production—to get a better balance of the farm business.

The lower price would curb production mainly on farms with profitable alternatives to dairying, including farms where the operator could go to part-time farming.

With voluntary payment plans and Class I pricing. This pricing system provides a base price for

excess milk, no limit on production but allows for payments to those who voluntarily limit production.

Participation is profitable with smaller direct payments than are needed in a program using blend pricing systems.

Such payments, in effect, are a substitute for the difference in income between milk sold at the excess price and the other products sold when milk is not produced. Since the difference is relatively small at the low price for excess milk, the payment is reduced. Incomes would be somewhat less, too.

This payment-pricing system would cut production on all the types of farms in the study. (1)

Laborsaving Systems Let Dairymen Expand Herds, Net Higher Incomes

Getting started in dairying? Want to install an automated housing and milking system?

ERS economists, in cooperation with the Minnesota Agricultural Experiment Station, have come up with estimates of the long-term cost and income potentials for six laborsaving systems.

All systems assume production of feed and dairy herd replacements on the farm. The first five systems are for a one-man farm with an additional half year of hired seasonal labor. The figures are based on estimates of typical construction costs and dairy prices in the area.

Stanchion barn with two-milker unit carry system: This setup was the most profitable of the six studied up to a herd size of 11 cows. With this small herd, however, returns were not sufficient to meet the fixed costs of operation and a net loss of \$2,231 was incurred.

Stanchion barn with three milker units and pipeline: Labor requirements were lower than for the other stanchion barn. This system was most profitable for herd sizes between 11 and 14 cows

but it still operated at a net loss. The maximum herd size one man could handle was about 26 cows—but beyond 14 cows the herringbone technology was more profitable.

Double-4 -5 and -6 herringbone milking parlors: Each of these systems had relatively low labor needs, making it possible for one man to handle a larger number of cows. The double-4 herringbone was the most profitable for farmers with 18 to 37 head. Gross income from a 37-cow herd was \$26,000; net income, \$3,578.

For farms with 37 to 46 head, the double-5 parlor was more profitable. Gross income ran as high as \$32,000 and net income about \$5,000.

With 48 to 52 head, an exceptionally good manager and operator who installed a double-6 herringbone could gross between \$34,000 and \$37,000. Net returns were about \$5,300 on this system.

Double-8 herringbone milking parlor: A larger dairy farm using a double-8 herringbone and employing one full-time hired man plus one man-equivalent of seasonal labor was able to expand the dairy herd from 52 to 90 cows. Gross income increased to \$64,000 while net income was as high as \$11,000. (2)

Computer Simulates Decision Making In Culling and Replacing Dairy Cows

Over several years, a farmer can spend a lot of time deciding whether to cull older cows and replace them with heifers.

In replacing milkers, the farmer can do one of two things—he can raise heifers or he can buy them. If he chooses to raise them, he must bear the cost of feed and other expenses until the heifers are ready to make their debut in the milking parlor. If the farmer buys replacements as needed, he makes a large cash outlay each time he purchases a cow of any quality.

Researchers have tackled this problem, using computer programming to provide the answers for a 30-cow herd. It took 893 steps to duplicate the farmer's decisions and to project the consequences over a five-year period. The feeding of high-quality forage and milk prices of \$4.60 per hundredweight were some of the assumptions. No expansion of the herd was permitted in the solution.

In each of the first four years of the simulation, net returns were highest under a policy of buying replacements. In the fifth year,

RAISING DAIRY HERD REPLACEMENTS RETURNS MORE NET INCOME BUT BUYING COWS BOOSTS PRODUCTION AVERAGE FASTER¹

Years from start of test	Raising heifers		Buying heifers	
	Estimated net returns	Estimated output per cow	Estimated net returns	Estimated output per cow
	Dollars	Pounds	Dollars	Pounds
1	4,852	9,968	4,770	9,772
2	5,685	10,602	6,219	11,129
3	6,389	11,117	6,941	11,645
4	7,099	11,398	7,292	12,029
5	7,894	11,533	7,571	12,287

¹ Herd is kept at 30-cow limit.

the use of heifers raised on the farm paid off. But overall improvement in the herd was more rapid and production per cow reached a higher level when cows were bought as needed. Part of the additional capital used to buy the cows was offset by the gain in herd quality. (3)

Southeast and Southern Plains Are Favored to Increase Output of Beef

It looks as though a lot of the fields in the Southeast will be used for grazing beef cows before long and it won't be accidental either. Several of the problems that limited cattle production in the Southeast in years past have been or are about to be licked. As a result, much of Dixie is a promising candidate favored to claim an increasing share of feeder cattle output. The Southern Plains states will share the honors.

Researchers estimate that by the 1970s, 60 per cent of the nation's beef cow herd will be located in these two regions. They include 12 states (Kentucky, Tennessee, Louisiana, Mississippi, Arkansas, Alabama, Oklahoma, Texas, Kansas, Nebraska, North Dakota and South Dakota) and together account for 63 per cent of the estimated national gain in beef cow numbers between 1960 and 1964. At present, these regions can claim roughly 45 per cent of all beef cows.

Here are several reasons why the southern states are moving into the feeder cattle business:

—Improved forage. (Previously southern pastures were poor or nonexistent.) Superior varieties of forages have been introduced recently and the use of fertilizer on pastures is rising. As a result, forage yields are gaining and are helping to reduce the cost of maintaining a cow herd. And the Southeast has always had the advantage over other areas of a long grazing season.

—Additional land is likely to

be diverted to forages. As cotton allotments were reduced, farmers frequently put the land in pasture and bought some cattle.

—Insect and cattle disease control. Previously a serious deterrent to cattle production in the South, pests and diseases are under fire from new methods of control as well as from improvements in breeding and herd management.

—Feed supplements. Use of some low-quality feeds with supplements and minerals makes them satisfactory for breeding herds. They result in a rate of gain reasonably comparable with higher quality rations. (4)

Consumers' Coolness Toward Lamb Effect of Erratic Supplies, Quality

If lamb producers could have what they want most, they probably would say they'd like consumers to eat their product more often. Lamb consumption per person has stayed between four and five pounds for several years.

Why do some consumers shun lamb? Research on their preferences has shown that the quality of lamb in the supermarket is often erratic. Lamb frequently is inferior in quality to comparable cuts of beef and pork.

Then too, consumers can't readily buy lamb if they do have a taste for it. One study revealed that only 39 per cent of all retail food stores handling red meats carried lamb. And it generally was higher priced than similar cuts of beef and pork.

Due in part to consumer apathy, sheep producers' profits have been low and the number of stock sheep has been declining steadily since the early 1940s.

The long-range prospects are that producers will continue to find themselves in a highly competitive situation. Only the efficient growers probably will be able to feed lambs and make a profit at it. (5)

Selling Feeders in Midwest, Instead Of Far West, To Pay Off for South

Out of context, 6 per cent may seem like a small figure. But when it represents some \$1.2 million, it can mean quite a lot to the people involved—in this case, to feeder cattle producers in the Southeast.

The \$1.2 million is the additional revenue that researchers figure the cattlemen in the Southeast would have made during 1962 had they shipped their feeders to the Midwest and saved the extra shipping cost to the Far West.

Western feedlots receive most of the southeastern animals because their owners are more willing to accept the lightweight, crossbred cattle produced in that area than are the farmers in the East and West North Central regions.

However, the southeastern cattle offer advantages, too—faster rate of gain, resistance to heat and the effects of shipping and the like. The research results indicate that some promotion of these advantages in the Midwest might enable southeastern producers to sell their cattle closer to home and make more money. (6)

Less-Publicized Facts About Labor Offer Hope for California's Problems

California's seasonal farm labor problems have been much in the news of late. But less well known are some of the efforts in organizing labor recruitment and distribution; experiments in selecting and training labor crews; research on new, even-maturing crop varieties; a general move to diversify farm operations and the characteristics of new workers entering the California labor market. If these trends continue as expected, a stable, local labor force could eventually handle most of the farm work in California.

Mechanization is one way to reduce the need for seasonal farm

labor. This is already the case for California's cotton. Less than 10 per cent of the crop is picked by hand nowadays. The planting, cultivation and harvesting of a number of other crops can be done by machine, too—and many of the machines are being developed.

The trend to machines is likely to emphasize the need for a smaller but dependable, year-round labor force. These people will be needed to operate the machinery and perform the more specialized, skilled hand labor used for fruits and vegetables.

According to a recent study of farm mechanization and labor stabilization in Kern County, California, the details on stable farm employment in the future are:

—Efforts by grower organizations to set up labor recruitment and distribution rather than depend on labor contractors, employment services or individual means. This trend holds promise of improving the general quality of the farm labor force and of raising incomes and standards of living for farm workers.

—Current experiments in se-

lecting and training crews of farm workers. Special techniques, tools and equipment are being used to determine the most efficient and productive ways to cultivate and harvest crops. The aim of these experiments is to develop workers who are proficient in performing all kinds of seasonal work in an area. This will help cut down migration of workers.

—Development of new crop varieties that mature early. Such crops could be picked mechanically in one quick operation while at peak quality. Researchers hope

FARM INCOME STATISTICS:

Some of the most quoted—and misquoted—of all statistics are the U.S. Department of Agriculture's national farm income figures. USDA publishes regularly a comprehensive set of income estimates relating to agriculture. The major series, along with other important series from which they are derived, have been developed over more than a third of a century. Each series, whether major or minor, is designed for a specific purpose. For accurate results it should be used only in the way it was designed to be used. Unselective use is a common cause of error. Many figures may be vaguely reported as farm income—cash receipts, realized gross income, total net income, for example. Yet there are billions of dollars worth of difference between them. USDA's estimates center around two major concepts of farm income: One views agriculture as a business or an industry and measures income from the job of farming. The other views the people who live on farms and measures their income from both farm and nonfarm sources. The major series in each classification and their relationship to other series are shown here (7)

INCOME FROM FARMING, 1964

Billion dollars

CASH RECEIPTS FROM FARM MARKETING Money received from sales of about 150 farm products.	36.9
GOVERNMENT PAYMENTS TO FARMERS Payments to farmers under farm programs. Net price support loans are included with cash receipts above.	2.2
NONMONEY INCOME Includes home consumption of farm products and imputed rental value of farm dwellings.	3.1
REALIZED GROSS INCOME FROM FARMING Income from farming available for all purposes—farm operation, family living and investment.	42.2
PRODUCTION EXPENSES All cash spent to operate the farm business, plus certain non-cash items. Includes depreciation of equipment and other capital items rather than current purchases of these items.	29.3
REALIZED NET INCOME USDA's standard net income figure. The word "realized" indicates that the figure has not been adjusted for changes in inventories. Represents return to operator for his labor and management, the labor of his family and his invested capital.	12.9
NET CHANGE IN INVENTORIES Difference this year from last in quantities of each crop and livestock product held on farms, valued at average prices received by farmers during the year just ended.	0.8
TOTAL NET INCOME This figure is a component of national income figures of the Department of Commerce. It is published in the national income reports of that Department as "net income of farm proprietors."	12.1

PERSONAL INCOME OF FARM POPULATION, 1964

Billion dollars

PERSONAL INCOME FROM FARM SOURCES:	
TOTAL NET INCOME FROM FARMING OF FARM RESIDENT OPERATORS This is the total net income of farm operators from farming minus the net income received by farm operators who do not live on farms.	10.3
FARM WAGES OF LABORERS LIVING ON FARMS Wages and other labor income for farmwork paid by farm operators out of their gross income to workers living on farms. These wages are a production expense to farm operators, but a source of income to the farm population.	1.0
CONTRIBUTIONS OF FARM RESIDENT OPERATORS AND WORKERS TO SOCIAL INSURANCE	0.2
TOTAL PERSONAL INCOME OF FARM POPULATION FROM FARM SOURCES	11.1
PERSONAL INCOME FROM NONFARM SOURCES: Includes wages, salaries, and other labor income of farm residents from nonfarm jobs, rents and royalties, dividends, and interest, net income from nonfarm business and professions, and transfer payments, such as unemployment compensation and social security.	6.8
TOTAL PERSONAL INCOME OF FARM POPULATION FROM ALL SOURCES	17.9

to make the growth period for the new varieties so uniform that the length of time needed for harvest can be determined within a few days by staggering plantings.

—More diversified crop enterprises in Kern County. This results in harvests (and available work) staggered over most of the year rather than for only a few weeks.

—More adaptable new workers. The new labor in California is largely Mexican immigrants or Americans of Mexican descent coming in from the vegetable and citrus production areas of southern Texas. Generally, they don't specialize as much as the existing seasonal labor force, so they are willing to do several kinds of work in an area. Also, their strong family ties tend to make them settle in a locality and become active members of the community. (8)

1965 Deciduous Fruit Crop Expected To Trail 1964 Record by 1 Per Cent

Production prospects for the 1965 deciduous fruit crop were generally good as of early July. The outlook is for a record crop of grapes, up 9 per cent from last year, a near-record crop of peaches and the second largest apple crop since 1949. All fruit crops except pears are expected to be above the 1959-63 average. Total deciduous fruit production likely will be about 1 per cent less than last year's record.

The 1965 pear crop is expected to be about 38 per cent under 1964 and 29 per cent less than the 1959-63 average. Poor weather in California and Washington accounted for most of the drop.

Citrus production during the 1964/65 season is running about 23 per cent higher than last year but still 2 per cent below average. Production of all citrus fruit is above 1963/64 except for lemons; production of lemons is smaller this season than last in both California and Arizona. (9)

It Often Pays to Irrigate One Crop Well Even if Water Supply Is Limited

Some important questions for farmers to ask themselves when prospective water supplies are limited or uncertain are:

Would it be more profitable to use scarce irrigation water on one crop than on another or should they partially irrigate several crops? Would profits be greater if less land were irrigated so as to approach an adequate water supply for fewer acres?

Some answers are given in a recent study of the most profitable on-farm adjustments to a limited and uncertain supply of irrigation water. The study was made in the Ashley Valley of Utah by ERS economists in cooperation with the Utah Agricultural Experiment Station. The findings show how farmers in the area might alter cropping patterns so that scarce water is allocated to those crops where net returns from irrigation are highest.

In the Ashley Valley area, the principal crops on the 60 farms surveyed were alfalfa, small grains and corn for silage; all were used locally to produce beef, sheep and dairy products. The water supply usually varied from year to year but farmers could count on one thing—water was generally scarce in the late season when it was needed for corn and alfalfa.

The economists found from budget analyses of grade A dairy farms, range beef and cash crop farms having 100-200 irrigated acres, that the best strategy for farmers to follow when water was limited but still adequate was to produce corn for silage rather than alfalfa. An increase of 12 acres of corn silage boosted net income by almost \$200 because corn for silage produced more feed nutrients per acre at an apparently lower cost. Corn was also valuable in the rotation as it was

the only row crop grown in Ashley Valley—and cultivated row crops help to control weeds.

However, farmers with a very poor water supply could not grow corn for silage. Budget analyses for these farms indicated that farmers would still do better to farm all available land rather than let it lie idle for want of irrigation water. Even though crops might have to be irrigated at lighter rates, the larger acreages would help offset the lower crop yields from partial irrigation.

Finally, the study suggests that if land and capital were available at reasonable cost, farmers in Ashley Valley would be able to compensate in part for the water shortage by acquiring more land. Then with larger scale operations, they could gain greater efficiency in the use of resources other than land and water. (10)

Cheapest Sprinkler-Irrigation System For Texas Plains Is Wet Line Setup

In the Texas High Plains, water is a critical factor in crop production. Crops usually are irrigated but sprinklers are used only when gravity flow systems aren't feasible. The investment and operating costs of pumping water from deep wells into a sprinkler system are considerably higher than costs for a gravity-flow setup.

Although sprinkler irrigation is costly, farmers do have a number of choices in the kind and size of equipment they use. To guide farmers in selecting a system, ERS has cooperated with the Texas Agricultural Experiment Station on a study of the costs of various sprinkler setups on farms in the High Plains.

Using 1962 prices for equipment, researchers found that among the sprinkler systems delivering 225 gallons per minute or less, a wet line setup powered by an electric motor cost the least to buy and operate—about \$24 per

acre (excluding labor to move the equipment). The initial investment was \$4,762. (A wet line irrigation system consists of a supply line from a well or wells and one or more laterals, all in use at once.)

A wet line using an electric motor also had the lowest water cost per acre—roughly \$18 (excluding labor) in the 225 to 449 gallons per minute range. The equipment cost \$5,669.

For systems delivering 450 to 674 gallons per minute and 675 gallons per minute and up, natural gas fueled wet lines were the most economical. Water costs were under \$17 and \$16 per acre, respectively, while initial investment ran to \$9,189 and \$10,029.

Farms in the study averaged 618 acres. Farmers reported using an average of about three sprinkler systems per farm. Most were using only one well. All sprinkler systems included deep well turbine pumps. From 0.5 to 6 acres were irrigated per setting and application rates ranged from 0.25 to 1.05 acre-inch per hour. Laterals were often moved by hand. (11)

Farm Output Down in 1964 Despite Second Largest Crop Harvest Ever

Led by a 12 per cent drop in feed grain production, U.S. farm output in 1964 declined (1 per cent below 1963) for the first time since 1957.

Still, while 1963 retained its title as "record high year," last year's performance merited the billing of second best year of record.

Although crop output was down 3 per cent from 1963, it was the second largest harvest ever. The 12 per cent drop in feed grain production, due to less acreage harvested and smaller yields, was offset by a 12 per cent hike in food grain output, due to more acreage and larger yields.

Oil crop production showed no change from 1963. But sugar crops, the only crop group to set a new record in 1964, were a whopping 55 per cent larger than the 1957-59 average.

Running contrary to the crop trend, output of livestock and livestock products toppled the

1963 record by 2 per cent and was 13 per cent greater than the 1957-59 average. Increased production of cattle and calves more than offset declines in hog and sheep output. Egg, broiler and turkey production continued the climb of recent years, each setting a new record in 1964. And dairy products equaled their record set in 1962.

Four of the 10 production regions across the nation found overall farm output higher than ever — Appalachian, Southeast, Delta and Pacific. Each of the four equaled or broke previous records for livestock production. But only the Delta and Pacific regions shattered previous records for crop production.

Nonpurchased inputs in agriculture fell 4 per cent last year compared with 1963. This was due in large measure to the reductions in operator and other unpaid family labor. In fact, overall labor requirements were down 4.5 per cent from 1963.

On the other hand, purchased inputs such as fertilizer, lime, pesticides, gas and oil jumped 5 per cent. Farmers used 8 million tons of the three major plant nutrients in fertilizer—nitrogen, phosphorus and potassium. This was nearly 11 per cent more than in 1963. The Corn Belt held the lead as the nation's biggest user of fertilizer, as it has been since displacing the Southeast in 1952.

The trend toward fewer but larger farms and, consequently, larger machines, has reversed the postwar upswing in inventory of farm machines.

The number of wheel tractors on farms has been off slightly in the last four years but average horsepower per tractor is twice what it was in 1950. Automobiles and farms with milking machines began to decline sometime after 1954. Grain combines apparently peaked in 1959. However, pickup balers, field forage harvesters and trucks have increased steadily since 1960. (13)

TRACTOR: IS BUYING THE ANSWER? Here's how to figure the cost per hour of use to own and operate a three-to-six bottom tractor. Start with the purchase price of a new or used tractor. Figure the annual depreciation as for tax purposes. Add an allowance for repairs, shelter, insurance and taxes. Include interest charges if borrowing money to make the purchase. Total these fixed annual costs and divide by the number of hours the tractor will be used. To this annual cost per hour, add the per hour operating costs—for fuel, oil and grease. Cost per hour: \$1.98 to \$2.76, depending on size of tractor. If rental rates are cheaper and rental tractors are available, it's probably better to rent than buy. These figures are averages supplied by Colorado wheat farmers in 1960. (12)



Size in bottoms	3	4	5	6
Cost when new	\$3,525	\$4,455	\$5,200	\$6,005
Investment in 1960	\$2,115	\$2,673	\$3,120	\$3,603
Hours of use annually	277	481	473	599
Annual fixed costs:				
Depreciation ¹	\$118	\$210	\$219	\$437
Repairs	63	104	99	141
Shelter, insurance, taxes	56	74	86	107
Interest ²	169	214	250	288
Total	\$406	\$602	\$654	\$973
Per hour	1.47	1.25	1.38	1.62
Operating costs per hour	.54	.73	.89	1.14
Total	\$2.01	\$1.98	\$2.27	\$2.76

¹ The cost when new less 20 per cent—the remainder divided by estimated years of use. ² Figured at 8 per cent on capital investment.



One group hit hardest by poverty in this country depends for its support entirely or in part upon farm wage work. To learn more about the size and other characteristics of this group, ERS recently made a study of

THE FAMILIES OF HIRED FARM WORKERS

Hired farm workers and their families made up only 6 per cent of the total population of this country in 1962. But such families included 27 per cent of all children living in households reporting incomes under \$3,000, the amount generally accepted as the poverty zone.

The proportion of hired farm worker households reporting incomes below \$3,000 was very high among nonwhites, 83 per cent. The proportion was also high—71 per cent—among those workers, white and nonwhite, who did some migratory work.

These are some of the findings of a recent ERS study of the 11.2 million people in 2.6 million households who depend on farm wage work for all or part of their support. Data are given by color and also by whether household heads did migratory farm work.

Fully 50 per cent of the 11.2

million people in farmhand households were less than 18 years of age. This compared with about 37 per cent for all households in the United States. Nonwhite hired farm workers averaged about three children per household; whites, two children. Migrant workers—white and nonwhite—had about three children for every two families.

Hired farm workers have for years been at the bottom of the heap in this country in terms of income, education and job status. Median family income for 1962 from all sources for all households with farm wage workers was about \$2,600. The median for all U.S. families was about \$5,900.

Median income reported by white hired farm worker households was \$3,156; households headed by migrants (of all races), \$2,149; nonwhites, \$1,505. In part this disparity results from the

fact that fewer nonwhite than white household members did nonfarm as well as farm work during the year. Nonfarm wages are generally higher than farm wages. Also, a higher proportion of nonwhite households was headed by persons who for much of the year were voluntarily out of the labor force or were unemployed.

The sex of the household head also affected incomes. Women headed 26.6 per cent of nonwhite households; 8.5 per cent of white households. They often earned less than men from farm work.

The median educational level of hired farm workers has not risen in the last two decades and still hovers at about 7.7 years. This is the lowest level of any major occupational group in the nation.

By contrast, the median educational level of the general population rose from 8.5 years in 1940 to 11.0 years in 1960.

In 1962, 44.6 per cent of non-white and 17.7 per cent of white farm wage workers had completed less than five years of school.

These persons are sometimes referred to as "functionally illiterate" because many never learned to read or write. Others, through disuse, had lost such skills in reading and writing they once may have had.

Their lack of education and the intermittent and seasonal nature of their work often handicap their children, perpetuating a low level of education and equally low levels of aspiration from one generation to another.

The problem is compounded by the fact that, within the farm wage worker population, families with extremely limited education are apt to be the families with the most children. (14)

Farm Population Continues to Decline; Age, Race Distribution Are Affected

Again in 1963-64, as in most years since World War II, several hundred thousand farm people either stopped farming their land or moved off their farms. The farm population dropped from 13,367,000 in 1963 to 12,954,000 in 1964.

The population on farms in 1964 was 6.8 per cent of the national population. In 1960 there were 15,635,000 people on farms, 8.7 per cent of the total population.

While the U.S. population increased by more than 6 per cent between 1960 and 1964, farm population declined by 17 per cent. All age groups in the farm population were involved in the exodus.

Some 9.9 per cent of farm residents were at least 65 years old in 1964, up from 8.4 per cent in 1960. The national percentage in 1964 was 9.6 per cent.

Not so very many years ago, the farm percentage was always lower than that for the total population because older farm

people often moved to town when they retired. They haven't stopped doing this, but young adults are moving to town so much faster that the proportion of older people in the remaining farm population has risen.

There were still more males than females in the farm population in 1964, as has traditionally been the case. The ratio was 109.3 males to 100 females in 1960. It had dropped to 106.5 by 1964 for all ages and at ages 25 to 44 women on farms exceeded men.

Children in 1964, as in 1960, made up a larger proportion of nonwhite than white farm residents. About 41 per cent of non-white farm people in 1964 were under 14 years; about 28 per cent of whites.

The nonwhite farm population is still declining faster than the white. Nonwhites on farms decreased 35 per cent between 1960 and 1964. The white farm population dropped about 14 per cent in the same period.

Altogether, a third of the drop in farm population between 1960 and 1964 was due to the exodus of nonwhites. (15)

Personality Plus

Success in the farm recreation business depends heavily on the sincere desire of the management to serve people. It demands a manager who has the patience to put up with and cater to the wishes of a wide variety of customers.

It also requires a manager who is:

—willing to learn from experience in a new venture and tailor his facilities and services to the market;

—able to deal fairly but firmly with his customers in cases of vandalism, littering, theft, fire and rowdiness;

—able to advertise and promote his business; and

—able to spend enough money to set up an efficient, profitable operation. (16).

Good Life Hard to Gauge But Facts Show Lack of Necessities on Farm

Who lives better: farmer or urbanite?

Seems like a simple enough question until you try to answer it with statistics.

The urbanite usually makes a lot more money but he seldom grows much of his own food. And housing is usually much more expensive in a city than in the country.

But there are some measures of levels of living that *are* fairly comparable. For example, availability of an automobile, telephone and hot and cold running water. These items are no longer luxuries but necessities if families are to realize the generally accepted standard of living in the United States.

These three measures, plus two others, were used by ERS in a recent comparison of census figures for rural and urban households. The additional measures were the condition of the dwelling, whether sound or dilapidated, and the ratio of people in the household to the number of rooms. A ratio of more than one person per room was selected as a measure of crowded living conditions.

Only in the case of availability of an automobile did rural families rank ahead of urban families. Eighty-eight per cent of urban families had cars, compared with 92 per cent of farm and 93 per cent of rural nonfarm families.

Only 68 per cent of farm and 73 per cent of rural nonfarm households reported having telephones. Eighty-six per cent of the urban households had them.

Hot and cold water piped inside dwellings was almost universal for urban families, 97 per cent. But only 69 per cent of farm and 81 per cent of rural nonfarm households enjoyed this amenity.

Families reporting a dwelling in sound condition were: urban, 89 per cent; rural nonfarm, 79

THE GROWING ODDS AGAINST DROPOUTS: The table shows the percentages of high school graduates among young men 25-29 years old, both white and nonwhite, in each major occupation group. Dropouts are practically out of the picture for the better jobs and the trend is to even stiffer competition. The most striking change in educational level between 1940 and 1960 occurred in the case of farmers and farm managers, where the proportion of high school graduates increased from 19 per cent in

1940 to 59 per cent in 1960. Three major developments are behind this change: (1) Declining numbers of farms and farmers—small, marginal farms, especially tenant farms, are being steadily abandoned. (2) Increasing mechanization and capitalization of agriculture—young men entering the field must have a high degree of technical and administrative skill. (3) Increasing accessibility of schools to rural youth—school busses and paved roads have eliminated one drawback of farm living. (18)

Major occupational group	Percentages of high school graduates among males 25-29 years old								
	1940			1950			1960		
	White	Nonwhite	Total	White	Nonwhite	Total	White	Nonwhite	Total
	Per cent								
Professional, technical and kindred workers	91	75	91	93	85	93	96	92	95
Managers, officials and proprietors, except farm	68	31	67	75	43	74	82	62	81
Clerical, sales and kindred workers	69	49	68	76	59	76	81	68	80
Clerical	n.a.	n.a.	n.a.	76	62	75	80	68	79
Sales	n.a.	n.a.	n.a.	77	48	76	82	65	82
Craftsmen, foremen and kindred	37	16	37	50	25	49	57	39	56
Operatives and kindred workers	29	11	28	35	18	33	41	29	40
Service workers	38	20	33	50	27	44	58	39	53
Farmers, farm managers, farm laborers and foremen	20	1	16	34	5	29	47	10	42
Farmers and farm managers	22	1	19	38	4	34	62	14	59
Farm laborers and foremen	16	1	13	25	5	21	26	9	22
Laborers, except farm and mine	22	5	19	28	11	23	34	20	30
Total	42	10	39	54	20	51	63	36	60

per cent; and farm, 71 per cent.

The percentages of families reporting more than one person to a room were: urban, 12 per cent; rural nonfarm, 17 per cent; and farm, 16 per cent.

Even greater differences between levels of living in city and country showed up when the first four measures were combined into a summary measure. The proportion of households reporting all four—automobile, telephone, hot and cold piped water and sound housing—was 73 per cent in urban areas, 60 per cent in rural nonfarm areas and 44 per cent for those on farms. Income was a closely related factor. Only 31 per cent of families with incomes under \$3,000 reported all items in the summary measure; 74 per cent of the over-\$3,000 group had all items. (17)

Conservation in the Missouri Ozarks Is Paying Off for Local Residents

Recent generations in the Missouri Ozarks have paid a heavy penalty for the wastefulness of early settlers. Theirs has been a legacy of cutover forests and restricted employment. The limited physical resources in relation to the number of people have resulted in low incomes for people in the area.

But the forests are coming back. According to a recent ERS study of employment in the timber industry of the Ozarks, more than 14,000 workers were employed in 1960. Most worked part-time, often in two or more wood-using industries. But their average annual earnings were only \$1,472. The equivalent of 6,810

full-time workers were employed in 1960.

Researchers expect harvesting and processing costs and prices of timber products to remain fairly constant. The value of timber products manufactured is expected to rise from \$50.6 million in 1960 to \$60.7 million in 1975. Employment will be about the same but wages and productivity should be 20 per cent higher. The payroll for the Ozark wood-using industries should increase from \$20.7 million in 1960 to \$24.8 million in 1975.

In contrast, the recreational industry had one-half as many workers and one-third the payroll in 1960. By 1975, payrolls and number of workers will be about the same for the timber industries and for the recreation enterprises in this Ozark area. (19)



By 1985 the wide open spaces of the West will have a lot more people and be considerably short of locally produced meat, poultry, dairy products and flour to feed them.

Specifically, ERS economists project the 1960-61 deficit in meat and poultry, already substantial at 1.3 billion pounds, to jump to 3.6 billion by 1985. This will represent a third of the total meat and poultry consumption in the West. Of course, such deficits will be compensated for by shipments from other parts of the country.

Production shortages in the West of milk and other dairy products will climb from 2.1 billion pounds to 3.1 billion by 1985—11 per cent of total needs.

Deficits in the flour and rice group should more than double by 1985, from the 1960-61 average of 500 million pounds to 1.2 bil-

lion—15 per cent of total consumption. The 1960-61 egg deficit of 15 per cent will be down to 13 per cent by 1985.

By *West*, ERS economists mean the three Pacific Coast states—California, Oregon and Washington—plus the Mountain states. As defined by Bureau of the Census, the latter are Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah and Wyoming.

These projections were based mainly on assumptions that trends in population, income, consumption, production and labor productivity during the 1950s and early 1960s will continue. However, some modifications were made when changes seemed likely. Future developments, of course, may cause actual quantities to differ considerably from projected quantities.

California will have the biggest

deficits by 1985. In 1960-61 the Golden State was already short by 37 per cent of producing enough meat and poultry to fill its needs; the deficit 20 years from now will be a little more than half of total needs.

Although California will have a small rice surplus, the wheat deficit will be so large that the wheat-rice group will show a 53 per cent shortage by 1985.

Washington-Oregon will be in somewhat better shape with a meat and poultry deficit by 1985 of 25 per cent; dairy products, only 1 per cent. The two states together will have a 90 per cent surplus in the wheat-rice group but the actual surplus will all be in flour.

The Mountain states two decades hence will have a surplus of 22 per cent in meat and poultry and a 4 per cent excess in the

flour-rice group. But dairy products will fall short by 3 per cent.

For the western region as a whole, output of bakery products will about keep up with the projected population boom. As expected in a major production area, there will be plenty of fresh fruits and vegetables.

Except for bakery products, ERS economists see employment declining by 1985 in all food processing industries or at best remaining at the 1954 level. With labor productivity climbing faster than output of dairy products, the dairy industry will have the largest drop in jobs by 1985—to about 80 per cent of the 1954 level.

Wholesalers of food and other farm products in the West are expected to up employment 65 per cent by 1985 compared with the 1954 base. This will be due chiefly to the fact that there will be far more people buying groceries in the region by 1985.

By the same token, there will be more food sold at retail. Food store sales are projected to jump 155 per cent by 1985 compared with 1954. A breakdown shows an increase of 155 per cent for California, 140 per cent for Washington-Oregon and 170 per cent for the Mountain states.

Similarly, retail employment will go up 60 per cent in California, 50 per cent in Washington-Oregon and 65 per cent in the Mountain states.

Restaurants, hotels, drive-ins and the like will share in the extra dollars generated by more and more people in a more and more affluent society. In the 1948-58 period, the number of eating places in the western region increased by 25 per cent.

Sales in away-from-home eating places by 1985 are projected to climb 190 per cent in California, 120 per cent in Washington-Oregon and 195 per cent in the Mountain states. (20)

Dairies Cite Reasons for Buying Milk Outside Area to Fill Spot Shortages

It's better to run short of local milk from time to time than to have to cope with local surpluses during the months of heaviest production.

This was the big reason cited by many dairies in an ERS survey for going outside their own market—sometimes to sources hundreds of miles away—to buy fluid milk to fill spot shortages.

For instance, some dairies sur-

veyed had contracts to supply military installations for which they used outside milk. This way, should the military contract not be renewed, the dairy wouldn't suddenly be left with a milk surplus that could disrupt the market.

Another factor in long-distance buying is price. Dairies can sometimes buy outside milk cheaper than milk produced under the marketing order in their own area, even with transportation and handling charges added.

Dairies reported little or no trouble in locating sources of fluid milk in other states or regions. They bought mostly from producer cooperatives, negotiating price on each shipment. The producer cooperatives, on the other hand, welcomed the chance to sell their surplus milk at fluid milk prices. As surplus, this milk sold locally would have brought only manufacturing milk prices.

The ERS study points out the benefits of more local coordination of milk supplies on the part of producer co-ops. In one market, for example, the co-op itself purchased the outside milk to supply dairies when local production ran short. Dairy managers expressed satisfaction with this arrangement. (21).

CALIFORNIA FOOD PRODUCTION DEFICITS TO ECLIPSE REST OF WEST'S OVER NEXT TWO DECADES

Foods	Years	California	Washington-Oregon	Mountain states
Million pounds				
Meat and poultry	1954-55	-684	-213	-33
	1960-61	-1,172	-239	+74
	1975	-2,347	-344	+260
	1985	-3,785	-412	+563
Dairy products	1954-55	-1,594	-34	+167
	1960-61	-1,958	-20	-115
	1975	-2,456	-75	-179
	1985	-2,851	-56	-244
Flour and rice	1954-55	-983	+835	+212
	1960-61	-1,358	+866	+39
	1975	-1,687	+1,055	+91
	1985	-2,427	+1,165	+69
Processed fruits and vegetables	1954-55	+2,836	+688	-319
	1960-61	+3,623	+1,034	-56
	1975	+4,931	+1,698	-37
	1985	+6,410	+2,347	+174

+ means surplus
- means deficit

Study of 37 Markets Shows Potatoes Of Big Five Producers Don't Compete

The big five U.S. potato growing areas are geographically dispersed, from Maine and New York, west to North Dakota-Minnesota, Idaho and California. But since the big population centers and markets are mostly along or east of the Mississippi River, all five producing areas sell large quantities of their potatoes in eastern markets.

However, an ERS analysis of potato unloads by rail and truck in 37 major market areas from 1961 to 1964 shows that there's little competition among the big five. The reason is that their shipments vary seasonally. Maine and Idaho shipments peak in the spring. California shipments are heaviest in the early summer while those from New York are highest in the fall. The North Dakota-Minnesota area tends to space out its potato shipments from October through March.

The volume of potatoes unloaded at the 37 markets surveyed doesn't represent total shipments from the big five producers.

While most of the 37 markets are scattered throughout the eastern half of the nation, each production area shows a somewhat different distribution and transportation pattern:

—Maine ships most of its potatoes within a 1,000 mile radius, with half the shipments going to two markets, New York City (mostly by rail) and Boston (primarily by truck).

—New York carlots are unloaded closer to home; almost 50 per cent were unloaded within the state in 1961-64. With distances to markets short, trucks are used almost exclusively.

—North Dakota-Minnesota distribution patterns begin to show the transportation problems of the western producers. Only 19 per cent of their 1961-64 shipments, on the average, were made

to nearby Minneapolis—chiefly by truck. About 30 per cent were shipped to two markets, Chicago and St. Louis, which meant hauls of up to 900 miles. For these distances, the North Dakota-Minnesota growers relied principally on rail transportation.

Idaho sold potatoes in all 37 markets. In fact, 90 per cent of the Idaho shipments in 1961-64 travelled anywhere from 850 miles up to 2,290 miles. And, of course, as distance increased, so did use of the railroads.

—Unloads in San Francisco and Los Angeles accounted for 50 per cent of California's shipments in the 37-market survey. Trucks were used mostly for these intra-state movements. But 30 per cent of California's unloads were in cities over 2,000 miles away. For these hauls railroads were the major carriers. (22)

Butter Is Loser as Other Dairy Items Up Sales Volume With Fewer Plants

A twenty per cent decline in number of plants but an 11 per cent increase in total dollar sales.

This seeming anomaly characterized the dairy processing industry between 1958 and 1963.

The five years saw fewer plants of all types with butter creameries showing the largest decline, 28 per cent, and condensed and evaporated milk plants, at 11 per cent, having the smallest drop.

Yet except for creamery butter, whose sales slipped 11 per cent in the five-year period, all product groups upped sales volume. Biggest gains were made by natural and processed cheese, which as a group hiked sales 41 per cent.

ERS economists point out that higher dollar sales with fewer plants were due in part to price increases. Wholesale prices of dairy products went up 8 per cent between 1958 and 1963 while retail prices climbed 4 per cent. In 1963, some 60 per cent of the plants processed fluid milk. (23)

Egg Packing Costs To Drop by 1970 As Output Offsets Rising Input Costs

Owners of egg packing plants, when looking to the future, should be encouraged by projections for their industry to 1970 and 1975.

The new projections were made by the Georgia Agricultural Experiment Station in cooperation with ERS.

The projections are contained in the fourth in a series of studies on the economic problems faced by poultrymen in marketing eggs in the South.

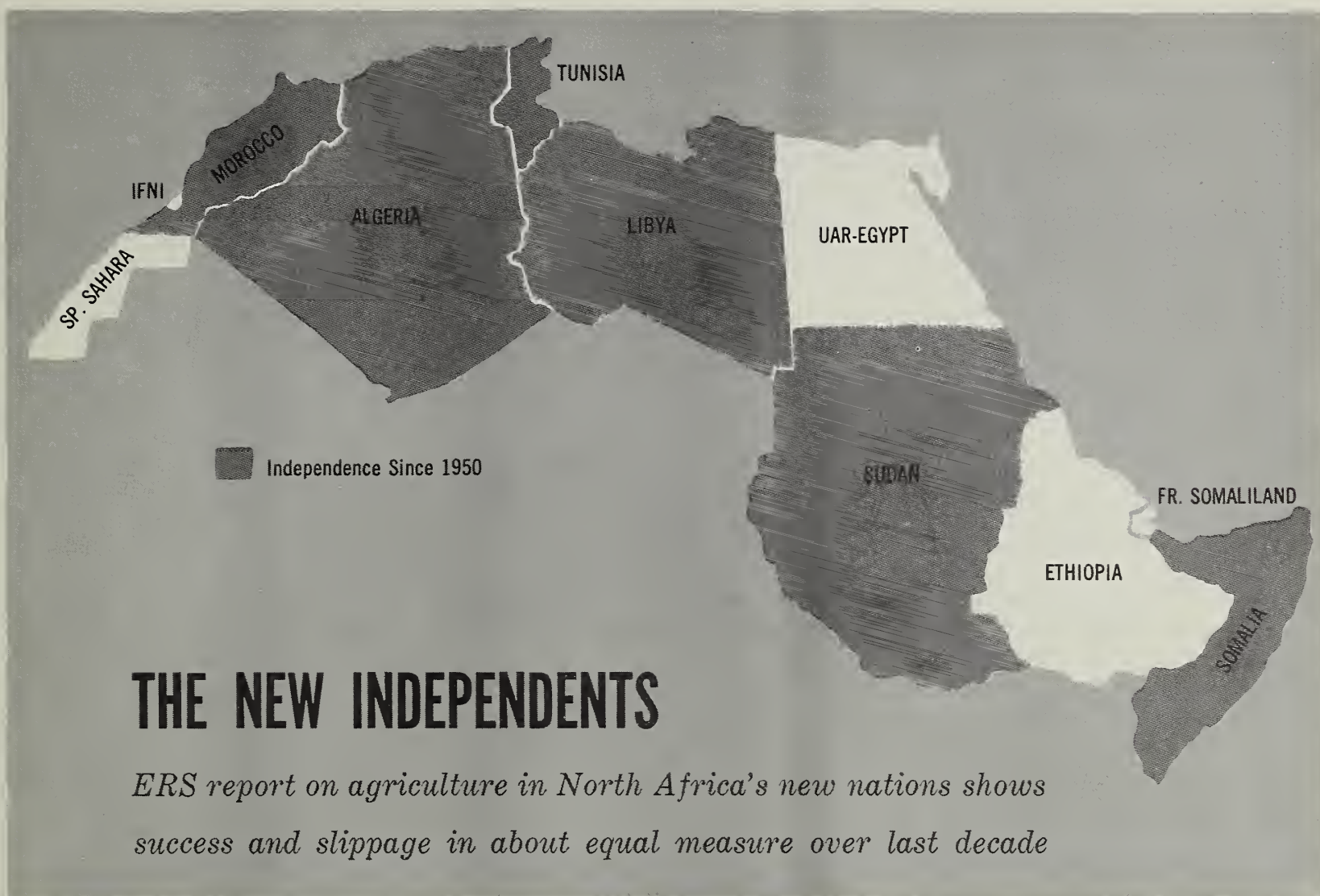
In line with the general upswing throughout the U.S. economy, the costs of goods and services used by egg packers will be higher in 1970 and 1975 than in 1960. But labor productivity, spurred by greater mechanization, will climb, too. In fact, increased output will just about balance the rise in the cost of all input items. As a result, total grading and handling costs should average up to 3 cents less per case, depending on plant size, in 1970 than a decade earlier. By 1975, total costs should be slightly higher.

The study shows plant machinery and equipment costs in 1970 will be up 17 per cent compared with 1960, building construction costs up 13 per cent.

Wages for in-plant workers will climb 27 per cent, managerial salaries 20 per cent.

However, productivity of in-plant workers is projected to skyrocket by 60 per cent between 1960 and 1970. Output per dollar of labor cost for in-plant operations will climb 26 per cent. Thus, in-plant labor costs are expected to drop, about 6.5 cents per case in larger plants, 10 cents in smaller plants.

Similarly, the supervisory staff will be 30 per cent more efficient by 1970. The new ERS study also shows that output per dollar of labor cost for management personnel will be 8 per cent higher than in 1960. (24)



THE NEW INDEPENDENTS

ERS report on agriculture in North Africa's new nations shows success and slippage in about equal measure over last decade

Six of the eight independent nations that cap the African continent gained their freedom in the last decade or so. They are Algeria (1962), Libya (1952), Morocco (1956), Somali Republic (1960), Sudan (1956) and Tunisia (1956).

Along with Ethiopia, a long-established monarchy and UAR (Egypt), independent since 1922, a new ERS study assesses the agricultural progress and problems of North Africa's "new independents" over the last 10 years. On balance, the report finds progress and slippage in about equal measure:

Farm output. North Africa's total agricultural production has climbed about 2 per cent a year; the production index in 1964 was 24 per cent above the 1952-54 base. Only Morocco failed to show some gain in total production.

However, population has out-run production and farm output

per person is less today than it was in 1952-54.

Farm inputs. UAR (Egypt) uses more nitrogen fertilizer per acre than the United States or the

United Kingdom (based on 1.5 crops per acre a year). It uses four-fifths of all the nitrogen fertilizer consumed in North Africa. This, plus irrigation, makes UAR's cotton yields the region's highest. At the same time, they are considerably lower than U.S. yields for the same type of long-staple cotton, also irrigated. UAR's problem is in part inadequate management and technical know-how.

As for the rest of North Africa, commercial fertilizer is still beyond the reach of most small farmers.

Tractor numbers in North Africa doubled between 1950 and 1960. Still, like fertilizer, they are not yet a factor on the average farm. From Morocco on the Atlantic to Ethiopia and the Somali-lands on the Red Sea, subsistence farming and primitive techniques remain the rule.

Crossword Puzzler

Placed like a small postage stamp over the southwestern coast of Morocco is a 579-square mile patch of rugged terrain familiar mostly to geographers. This is Ifni, an African province of Spain and an enclave in Morocco.

Many of Ifni's 50,000 people specialize in raising goats, camels and other livestock. The land is too dry and hilly to support crops other than wheat, barley, cotton and tobacco.

Ifni looks to the surrounding Moroccan market for jobs and trade. Its limited imports come mainly from the Canary Islands; exports are virtually nil. (25)

Land tenure. The UAR's land reform program has reportedly put 300,000 families on their own farms since 1952. The Emperor of Ethiopia has personally distributed state lands among unemployed people. Reform laws passed in Algeria and Tunisia have been aimed primarily at estates owned by Europeans. Morocco has sought to consolidate small, inefficient holdings into efficient-size farms.

The Algerian program has met with numerous difficulties. Many big estates, still intact, are run by "management committees." Reform in Ethiopia has also encountered delaying tactics; much of the best agricultural land is owned by the Coptic Church. Similar problems slow land reform efforts in the other North African nations.

Trade. Overwhelmingly an agricultural region, North Africa depends on grain, citrus, coffee, cotton and other farm exports for most of its foreign exchange. The volume of these exports has climbed steadily in the past decade. Yet they bring in no more money than they did in the mid-

1950s. Reason? A decline in world prices of many agricultural products.

The region is taking more and more U.S. farm products—5 per cent of all our agricultural exports in 1963. Most U.S. shipments are made under government-sponsored food aid programs. (26)

Nation On the Go Moves in Directions Leading to Dollars for U.S. Exports

A jump in the demand for red meat. Government action to curtail dairy production. An economy that has been growing at around 10 per cent a year.

These are miscellaneous facts about tiny Israel but facts with a direct bearing on American agriculture.

For a country of its size, Israel's 2.5 million people use a surprising amount of American farm products. U.S. agricultural exports to Israel amounted to \$69.0 million in 1963. And changes in the nation's economy, eating habits and agricultural potential soon show up in U.S. trade figures.

The dairy trade is a case in point. Projections of Israel's food supplies and needs made earlier this decade indicated the nation would be self-sufficient by now in milk and dairy products. But the government, taking another look at the dairy industry, and considering the country's limited land and water resources, decided that domestic production in excess of fluid needs was impractical and cut back on output. Current Israeli proposals are to produce only enough milk for fluid needs, not enough for manufactured requirements.

Tie this to a national economy that is growing rapidly and an unforeseen shift toward higher consumption of dairy products and the prospects for commercial imports look good.

For exporter nations, it means Israel will be importing dairy products—mainly dry milk, hard cheese and butter—equivalent to about 26 million quarts of milk. And the U.S. is the principal supplier of dairy products.

Unless the government changes its policy, the market in Israel for

Foreign Spotlight

REPUBLIC OF SOUTH AFRICA. Pretoria reports that about a third of all U.S. exports, industrial and agricultural, to the entire African continent come to South Africa. Preliminary U.S. figures for 1964 show the percentage of our total exports to the republic as 28.2 per cent. The discrepancy is probably due in part to the different methods used by the two countries in assessing the value of goods shipped.

GHANA. The nation's money problems have become so acute that Accra has drastically curtailed imports of much needed food and industrial raw materials. The government has reportedly asked for massive loans totaling some \$3.5 billion but has been turned down by the United Kingdom, the United States, Belgium, West Germany, the Netherlands, France, Italy and Japan. In essence, Ghana has been told to take its problems to the

International Monetary Fund. Should Ghana agree to a stabilization program with the Fund, the nations previously approached may reconsider. Ghana had reserves of \$560 million at independence in 1957. Today reserves are down to \$25 million and short-term debts, which are owed mainly to European suppliers, are about \$600 million.

BOLIVIA. Descendants of the ancient Incas are being moved off tiny farms on the Altiplano, the rocky, wind-swept plain that sprawls three miles high across the top of the Andes. Some 2,000 Indian families should be relocated by year's end near Cochabamba on fertile low-land farms of about 20 acres apiece. Two other resettlement areas will take care of an additional 6,500 families. The Bolivian government currently is building some 125 miles of access roads, plus schools, hospitals, community centers and other facilities in the area. (27)

these products in 1975 should be even greater, given the population increase. U.S. exporters, however, won't have the market all to themselves. The Netherlands, Denmark and Australia will be powerful competitors.

Earlier projections for 289,000 tons of imported feed grains by this year have already turned out to be too low. Between 1958 and 1963, annual imports averaged 300,000 tons. By the end of this year, imports should run to at least 460,000 tons, with the U.S. share about 80 per cent.

Similar changes in the country's economy and policies have, to varying degrees, affected the import outlook for all eight principal imports of U.S. farm products. Along with feed grains and manufactured dairy products, the commodities are: wheat, oilseeds, cotton, tobacco, meat other than poultry and rice. Combined these commodities make up nearly nine-tenths of Israel's total agricultural imports from the U.S.

U.S. exporters currently ship about 210,000 tons of wheat to Israel or about 80 per cent of that country's total imports. By 1975, U.S. exports should amount to roughly 230,000 tons, a slightly smaller share of the total. But the U.S. will have to work hard to hold on to its market since other wheat producing nations are eager to increase their share of this market.

Israel, once primarily a food aid market, is moving more and more to dollar purchases. Commercial prospects are especially good for U.S. grain, soybeans, cotton, rice, tobacco and meat.

Soybeans, for example, have proven to be a most economical raw material for the nation's combined fat and protein feed supply. Imports of soybeans are expected to hit 245,000 tons this year with the U.S. supplying 90 per cent of the total.

Though the U.S. may provide a slightly smaller share of total soybean imports by 1975, the volume

is expected to remain around 240,000 tons.

Cotton imports, too, have been unexpectedly high because of shifts in the country's economic policy. The earlier projections, in fact, indicated no imports at all for cotton by 1965. But the vastly stepped-up capacity of Israeli mills has left a need for about 10,000 tons of raw cotton over the national output. U.S. exports make up about half this deficit.

How long such exports can last will depend on the ability of the Israeli textile industry to compete in the world market.

The current market for U.S. rice in Israel is about 7,500 tons a year or roughly half their total imports. But both the U.S. share of total imports and the actual volume of our rice exports are expected to drop off by 1975 because of foreign exchange problems and a desire to increase trade with Asia. The U.S., thus, is expected to end up with about 25 per cent of the Israeli rice market or 4,500 tons.

Projected imports of American tobacco were about 300 tons for 1965; by 1975 they are expected to be about 600 tons.

Though imports of U.S. beef are already near the total expected for all imports in 1965, it is likely the U.S. share will drop off sharply since we are a residual supplier of the country's needs. (28)

Farm Exports Partly Fill Payments Gap Caused by Cold War, Other Costs

In 1964 our balance of payments deficit, still serious at \$2.8 billion, would have been considerably larger had it not been for the dollars earned abroad by U.S. farm exports.

In the five years 1960-64, U.S. agricultural exports climbed 31 per cent, from \$4.8 billion to an all-time peak of \$6.3 billion. Dollar sales rose from \$3.3 billion in 1960 to \$4.6 billion in 1964.

Even food and fiber shipped

under Food for Peace programs helped to reduce the payments deficit. Earnings from use of local currencies and the barter of farm products in place of dollar expenditures abroad, plus dollar repayments under P.L. 480, came to \$352 million in 1964. Add this to the \$4.6 billion in commercial sales and U.S. agricultural exports ended the year by contributing some \$5 billion to improve our payments position.

Actually, the balance of payments is not caused by a deficit in trade. Along with agriculture, U.S. industry has consistently increased foreign sales, from \$14 billion in 1960 to \$17.3 billion in 1964.

The dollar drain stems from our nonmerchandise expenditures abroad—cold war outlays, tourist expenditures and investments by U.S. private industry in plant, equipment and labor. (29)

Rice, Wheat, Barley Crops Are Down; May Cause Soaring Imports in Japan

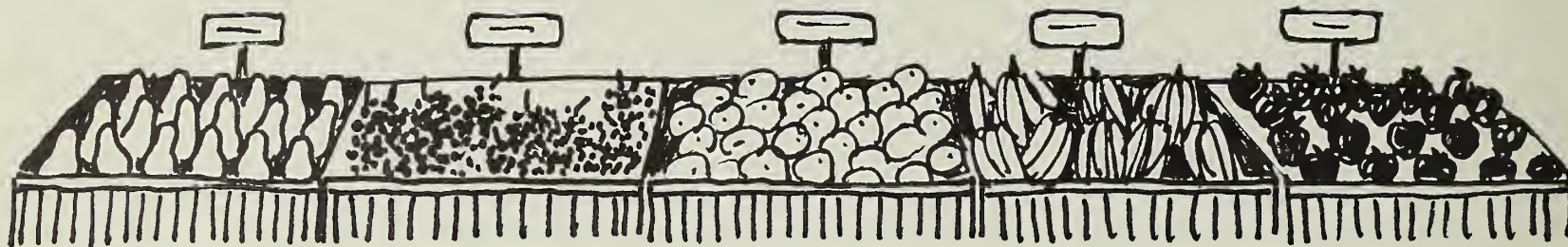
Advance figures on rice production and supplies in Japan indicate the nation may have to import 700,000 tons of rice in fiscal 1965 (April 1965 to March 1966), not to mention some 4 million tons of wheat and barley.

Imports of rice during fiscal 1964, according to a recent survey by the Food Agency of Japan, stood at 514,000 tons, the greatest amount since fiscal 1956. Imports of wheat and barley reached 3,919,000 tons, the record since the end of World War II. In 1964, cold weather damaged the rice crop in Hokkaido.

The Food Agency had estimated rice and wheat imports in fiscal 1965 would be about the same as in 1964. However, this year's rice crop may be curtailed by the delay in planting as well as other unfavorable factors. And the acreage for wheat and barley may also be down 10 per cent compared with fiscal 1964. (30)

To find out how satisfied consumers are with the quality, quantity, price, packaging and variety of the fresh fruits available to them, a representative sample of homemakers across the nation were asked:

WHAT FRUITS DO YOU BUY AND WHY?



One way to find out what fruits homemakers like is to keep track of what sells. Another way is simply to ask them—and USDA's Statistical Reporting Service has recently finished doing just that.

Almost 2,500 homemakers were interviewed. They were asked about their use and opinions of selected fresh and canned fruits, fruit juices, prunes, raisins and applesauce.

They were given a list of fruits and juices and asked which they had bought in the previous 12 months.

Among the fresh fruits asked about, more than 80 per cent of the homemakers had bought bananas, apples, grapes, peaches and oranges. Fresh pears, plums or prunes, sweet cherries and nectarines were mentioned by 30 to 70 per cent of the homemakers. Less than 30 per cent had bought fresh pineapples and apricots.

The homemakers who had not bought various fresh fruits were asked why. The highest proportion of those who hadn't bought apples, grapes, peaches, pears, plums or fresh prunes in the previous 12 months said they had their own trees or they were kept supplied by friends or relatives.

Health reasons were cited more frequently by nonpurchasers of bananas and oranges. Apricots and nectarines were not bought because they were either not avail-

able or not known. Cherries were thought to be too expensive; pineapples too hard to prepare.

Most of the homemakers apparently still prefer to buy all their fresh fruits loose. They can select the number and size they want and can see that none are bruised or spoiled. On the other hand, many mentioned the advantages of packaging—it is timesaving and sanitary.

Among the interviewees who bought fresh fruit, 67 per cent preferred all fruit loose; 9 per cent wanted it all packaged; 14 per cent wanted some fruit one way, some the other; and 9 per cent expressed no preference.

The homemakers were asked about their use of and the specific qualities they preferred for four fruits—fresh apples, dried prunes, raisins and applesauce.

The majority estimated that they used apples at least once a week. Almost all had used them raw; four out of five had also used them for cooking. They wanted apples without blemishes, of medium size but firm. When selecting apples to eat raw, appearance was of major concern to housewives—over a fourth cited “shiny” as a desirable quality. Nearly two-fifths wanted their cooking apples tart.

When asked whether they had had any difficulty finding the type of apples they wanted in the pre-

vious 12 months or whether they were disappointed in their purchases, a large majority said, “No.”

About three-fifths of the homemakers had bought prunes but most used them infrequently. They mentioned health and taste reasons for using them. And they said they used them in recipes and as a meal complement.

Most of the households—83 per cent—had used raisins. Two out of five families used them twice a month or more. Most frequent use was reported in the West.

Applesauce—either homemade or processed—was used by 85 per cent of the homemakers. Of the seven in 10 who had used canned applesauce in the previous 12 months, 45 per cent preferred homemade to canned, 36 preferred the canned and 19 per cent had no preference.

Most of them wanted a yellow, sweet tasting, smooth applesauce of medium thickness. Most homemakers used the applesauce as a side dish or dessert.

There were a few regional differences. Homemakers in the North Central region were more interested in a sweet taste than those in the West. Fewer homemakers in the South wanted cinnamon in their applesauce. Northeasterners emphasized smoothness and about a fourth preferred pink to yellow. (31)

THE CONGO'S AGRICULTURAL ECONOMY IN BRIEF. S. W. Skinner, Foreign Regional Analysis Division. ERS-For. 121.

If domestic peace can be restored, the Republic of the Congo (Leopoldville) should be able to make good economic progress. Much of the Congo's industry is related to agriculture, including palm oil processing plants, cotton gins, textile mills and cigarette factories. (See June 1965 Farm Index.)

AGRICULTURAL ECONOMY OF NORTH VIETNAM. M. R. Larsen, Foreign Regional Analysis Division. ERS-For. 123.

Under the Communist regime, North Vietnam's agriculture has undergone massive institutional changes. Through successive steps of land reform and socialistic organization, almost 90 per cent of all peasant families have been incorporated into agriculture's socialist structure. Almost one-half of these families belong to rudimentary forms of collectives which direct production, distribution and consumption of agricultural production. The remainder belong to more sophisticated collectives. (See May 1965 Farm Index.)

INCREASING WORLD FOOD OUTPUT—PROBLEMS AND PROSPECTS. L. R. Brown, Foreign Regional Analysis Division. FAER-25.

Nearly half of the world's people live in less developed countries that are now essentially fixed-land economies (where almost all cultivable land is already in use). These countries must look to rising per acre yields for most of the additions to their food supply if they hope to regain the capacity to feed themselves. This report discusses some of the various factors which are necessary to achieve a sustained rise in yield per acre—a yield take-off. (See January 1965 Farm Index.)



recent publications

The publications listed here are issued by the Economic Research Service and cooperatively by the state universities and colleges. Unless otherwise noted, reports listed here and under Sources are published by ERS. Single copies are available free from The Farm Index, OMS, U.S. Department of Agriculture, Washington, D.C. 20250. State publications (descriptions below include name of experiment station or university after title) may be obtained only by writing to the issuing agencies of the respective states.

THE ROLE OF AGRICULTURAL COMMODITY ASSISTANCE IN INTERNATIONAL AID PROGRAMS. F. D. Barlow, Jr. and S. A. Libbin, Development and Trade Analysis Division. ERS-For. 118.

According to recent projections of food supplies and demand, the need for agricultural commodity aid will probably increase in the future as populations increase and economic development moves ahead in less developed countries. But the actual amount of such aid given will depend on many factors. (See May 1965 Farm Index.)

FOOD BALANCES FOR EIGHT EAST EUROPEAN COUNTRIES, 1959-61. East European Branch, Foreign Regional Analysis Division. ERS-For. 124.

East Europeans are, on the average, among the one-third of the world's population considered to have adequate diets. Among the adequately fed, however, East European consumers ranked low. On the average, caloric intake was about the same in Eastern and Western Europe. But calories from grain and potatoes averaged 20 per cent higher in Eastern Europe while animal protein consumption averaged one-third less than in Western Europe.

U.S. AGRICULTURAL TRADE WITH THE WESTERN HEMISPHERE. J. J. Naive and G. A. Bennett, Foreign Regional Analysis Division. ERS-For. 122.

Canada will likely remain the dominant hemisphere market and a leading world market for U.S. farm products in the years ahead. But the potential for expanding sales is particularly great in Latin America. Continuing problems of foreign exchange and competition from other suppliers are expected to be more than offset by an upsurge in potential demand, little net gain in local production and a continuation of the Food for Peace program. The immediate prospects for trade are brightest in Mexico, Peru and Venezuela. (See June 1965 Farm Index.)

PROFITABLE FARM ADJUSTMENTS IN THE USE OF IRRIGATION WATER IN ASHLEY VALLEY, UTAH. C. E. Stewart, Farm Production Economics Division, in cooperation with the Utah Agricultural Experiment Station. Utah Agr. Expt. Sta. Ag. Ec. Series 65-2.

Within a given farming situation, it may be more profitable to use scarce irrigation water on one crop than on another or than partial irrigation on several crops. Further, it may be more profitable to irrigate less land so as to approach an adequate supply for fewer acres. (See page 9 this issue.)

LABOR REQUIREMENTS AND COSTS FOR SPRINKLER IRRIGATION, TEXAS HIGH PLAINS. W. F. Hughes, Farm Production Economics Division, in cooperation with the Texas Agricultural Experiment Station. Tex. Agr. Expt. Sta. MP-750.

On the High Plains, sprinkler irrigation is used in situations where generally it is not feasible to distribute water by gravity flow. At 1962 price levels, the total sprinkler cost per acre (excluding irrigation labor) ranged from about \$16 per acre on a natural gas-fueled system distributing 810 gallons per minute to \$44 per acre on an L.P. gas-fueled system distributing 150 gallons per minute.

APPLICATION OF ACTIVITY ANALYSIS TO REGIONAL DEVELOPMENT PLANNING: A CASE STUDY OF ECONOMIC PLANNING IN RURAL SOUTH CENTRAL KENTUCKY. R. G. Spiegelman, Stanford Research Institute, and E. L. Baum and L. E. Talbert, Resource Development Economics Division. Tech. Bul. 1339.

This report is concerned with the development and utilization of an econometric model for planning economic development in small rural areas. The planning model was developed for the Glasgow trade area in rural Kentucky.

ADJUSTMENTS OF RICE FARMS TO CHANGING CONDITIONS, GRAND PRAIRIE, ARKANSAS. W. R. Grant and T. Mullins, Farm Production Economics Division, in cooperation with the Arkansas Agricultural Experiment Station. Ark. Agr. Expt. Sta. Rpt. Series 134.

The prime objective of this report was to determine the optimum farm organizations adapted to the various resource situations and sizes of farms in the Grand Prairie area, under a range of prices received for rice and soybeans, and for different levels of technology.

WATERSHED PROGRAM EVALUATION—EAST WILLOW CREEK, MINNESOTA. Resource Development Economics Division and the Soil Conservation Service. ERS-231.

In 1954 a watershed protection plan for East Willow Creek was drawn up; the work plan included land-treatment measures, dams for flood protection and land stabilization, and the improvement of sub-watershed waterways. This report reviews and analyzes the results of project installations through 1960.

INCOME OPPORTUNITIES FOR RURAL FAMILIES FROM OUTDOOR RECREATION ENTERPRISES. R. Bird and B. T. Inman, Resource Development Economics Division. AER-68.

Those recreational businesses capable of yielding enough income to support a family required full-time efforts of at least one worker and an investment of over \$50,000. They included youth camps, minnow farms, shooting preserves, dude ranches and recreational complexes. Some enterprises, usually supplementary to farming, returned satisfactory incomes for part-time efforts of the operator. (See July 1965 Farm Index.)

EMPLOYMENT, UNEMPLOYMENT, AND LOW INCOMES IN APPALACHIA. T. E. Fuller, Pennsylvania State University, and E. L. Baum, Resource Development Economics Division. AER-73.

Appalachia has a disproportionate share of the nation's unemployed workers and low-income families. However, the economy of the region is neither entirely nor uniformly "depressed." Development strategy for Appalachia ought to consider both the amounts of financial resources available for development and a determination of which subareas have growth potential. (See March 1965 Farm Index.)

PRODUCTION LABOR REQUIREMENTS IN SOUTHERN RICE MILLS. J. C. Eiland, Marketing Economics Division. MRR-714.

Findings of this study indicate that if the rice milling industry were to use only the most efficient methods used by the mills studied and perform work at the rates of the standards set in this study, there would be potential savings in production labor costs of roughly 50 per cent. Assuming these conditions, total rice milling costs (operating, administrative and management) could possibly be reduced by about 10 cents per 100 pounds of rough rice milled. (See July 1965 Farm Index.)

STATE-OWNED RURAL LAND, 1962: ACREAGE, DISTRIBUTION, USE. H. T. Frey, Resource Development Economics Division. Statis. Bul. 360.

The Economic Research Service periodically inventories the major uses of all land in the United States. To obtain this information for 1962, a mail survey of state land-administering agencies was undertaken. All known state agencies which might be expected to administer significant acreages of land, and many institutions and other agencies likely to administer small acreages, were accounted for.

ECONOMIC IMPACT OF FEDERAL CROP INSURANCE IN SELECTED AREAS OF VIRGINIA AND MONTANA. L. A. Jones and D. K. Larson, Farm Production Economics Division. AER-75.

Farmers in southern Virginia and north central Montana meet crop production risks in various ways. Federal crop insurance (FCI) provides an important means by which farmers have reduced the financial impact of crop losses, particularly those with less farm diversification, smaller incomes, fewer savings and larger debts.

THE EXPANDING AND THE CONTRACTING SECTORS OF AMERICAN AGRICULTURE. R. Nikolitch, Farm Production Economics Division. AER-74.

The total number of farms in American agriculture has been declining for more than 20 years. Yet the number of the larger farms is increasing while the number of smaller farms is decreasing rapidly. Since 1939, U.S. agriculture has been characterized by an expanding sector of larger farms and a contracting sector of smaller farms.

PREDICTING REGIONAL CROP PRODUCTION—AN APPLICATION OF RECURSIVE PROGRAMING. W. N. Schaller, Farm Production Economics Division, and G. W. Dean, University of California. Tech. Bul. 1329.

One of the critical components in formulating intelligent farm policy is understanding and accurately predicting farmers' production response under alternative conditions. This study evaluates the characteristics and performance of a relatively new predictive technique called recursive programing, which employs linear programing to generate a series of year-to-year adjustments.

THE HIRED FARM WORKING FORCE OF 1963 WITH SUPPLEMENTARY DATA FOR 1962. G. K. Bowles and W. E. Sellers, Jr., Economics and Statistical Analysis Division. AER-76.

The 1963 estimate of 3.6 million persons who did farm work for cash wages at some time during the year is about at the level that has prevailed since the mid-1950s. The steady decline in the number of farm operators and unpaid family workers recently is not evident among hired workers. (See June 1965 Farm Index.)

THE TRAFFIC PATTERN OF AMERICAN RAW COTTON SHIPMENTS, SEASON 1961-62. J. R. Potter, Jr., Marketing Economics Division. MRR-705.

Of the more than 14 million bales of raw cotton shipped from U.S. warehouses in 1961-62, 73 per cent were hauled by railroad and 27 per cent by truck. Trucks were used mainly for the short hauls within the Southeast, for shipments from the South Central region to southeastern mills, for shipments to the port of New Orleans from other points in the South Central region, and for shipments in California and Texas from producing areas to ports.

LONG-DISTANCE SHIPMENT OF MILK—MARKETING PRACTICES OF BUYERS AND SELLERS. D. H. Carley, Marketing Economics Division. ERS-230.

The organization and operation of markets for bulk milk that moves long distances tend to be loosely coordinated. Much of the buying and selling is on a spot or seasonal basis with individual firm decision-making on each purchase. Most buyers indicated that a shortage of local supplies was the reason for purchasing outside milk.

MARKET POTENTIAL FOR LOW-FAT MILK. H. H. Moede, Marketing Economics Division, and B. Burnside, Statistical Reporting Service. MRR-709.

The sale of low-fat milk has brought some new users of fluid milk into the marketplace although it has displaced other types of fluid milk, chiefly whole and skim milk. Total fluid milk sales do not appear to measurably increase by sales of low-fat milk. On the other hand, the availability of low-fat milk does help retain as fluid milk users some customers who would otherwise not purchase any fluid milk. (See June 1965 Farm Index.)

Numbers in parentheses at end of stories refer to sources listed below:

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17. J. D. Cowhig, Urban and Rural Levels of Living: 1960 (M); 18. J. D. Cowhig and C. L. Beale (SM); 19. R. Bird, Contributions of the Timber Industry to the Economy of the Missouri Ozarks, Mo. Agr. Expt. Sta. (M*); 20. D. G. Stallings, Long-Run Projections of Food Processing and Marketing in the West, AER-78 (P); 21. D. H. Carley, Long-Distance Shipment of Milk—Marketing Practices of Buyers and Sellers, ERS-230 (P); 22. C. G. Williams (SM); 23. Dairy Situation, DS-306 (P); 24. H. B. Jones, Economies of Scale in Egg Packing Plants Under Changing Cost and Technological Conditions, Ga. Agr. Expt. Sta. (M*); 25. C. J. Warren (SM); 26. C. J. Warren and C. Santmyer, Agriculture of Northern Africa, ERS-For. 128 (P); 27. Foreign Regional Analysis Division (SM); 28. L. E. Moe, Israel: Projections of Supply and Demand for Agricultural Products to 1975 (M); 29. R. L. Tontz, H. W. Henderson and M. H. Spears, "Agricultural Exports Help Balance of Payments," For. Agr. Trade, July '65 (P); 30. Foreign Regional Analysis Division (SM); 31. L. Y. Clayton, Homemakers' Use of and Opinions about Selected Fruits and Fruit Products, SRS-6 (P); 32. Farm Mortgage Lending, FML-14 (P).

*Speech (S); published report (P); unpublished manuscript (M); special material (SM); * State publications may be obtained only by writing to the experiment station or university cited.*

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Loans Leap

Two billion dollars is a lot of money in lenders' language. Particularly for the three major sources of farm mortgage credit—the federal land banks, 20 reporting life insurance companies and the Farmers Home Administration.

During 1964, these three lenders closed \$2 billion in new farm-mortgage loans (including increases in existing loans). This is 24 per cent more than the amount closed in 1963. Together, the major farm lenders now hold about 45 per cent of total farm mortgage debt.

The dollar amount of federal land bank loans made in 1964 (including refinancing of old loans) was 34 per cent larger than in the preceding year. Loan volume of the reporting life insurance companies increased 18 per cent. The dollar value of new FHA loans (direct farm-ownership and farm and nonfarm rural-housing loans) was down 2 per cent from 1963.

Interest rates on new farm mortgages remained practically unchanged. Three-fourths of the federal land banks continued to charge 5.5 per cent in 1964. Interest rates on life insurance company loans averaged 5.7 per cent. FHA loan rates continued at the statutory level of 5 per cent for direct farm-ownership loans, 4 per cent for rural-housing loans.

Repayments for the three lenders reached \$1 billion, up 14 per cent from 1963. The combined annual repayment rate during 1964 was 10 per cent of the amount outstanding at the beginning of the year. (32)

THE FARM INDEX

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The Farm Index is published monthly by the Economic Research Service, U.S. Department of Agriculture. August 1965. Vol. IV, No. 8

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EDITOR, Theodore Crane; ASSISTANT EDITOR, Story E. Moorefield; STAFF EDITORS: Marilyn H. Grantham and Lilla Dunovant McCutchen; PRODUCTION EDITOR: Geraldine Cummins.